

A1

5. (Amended) A thermocouple as claimed in claim 1 in which refractory material includes particulate borosilicate and boric acid powder.

A2

7. (Amended) A thermocouple as claimed in claim 5 in which the boric acid comprises about 3% to 5% weight of the refractory material.

8. (Amended) A thermocouple as claimed in claim 5 in which the boric acid content of the refractory material is about one half of the borosilicate content.

9. (Amended) A thermocouple as claimed in claim 2 in which the tubes of the sheath are stainless steel.

10. (Amended) A thermocouple as claimed in claim 2 in which the refractory material is predried at a temperature of between 135° and 150°C.

12. (Amended) A thermocouple as claimed in claim 2 in which the refractory material is beaded before being formed into the sheath.

A3

13. (Amended) A thermocouple as claimed in claim 1 in which the tip is formed from a thermocouple cable with a negative metal tube housing a positive wire embedded in a low temperature sintering material.

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14. (Amended) A thermocouple as claimed in claim 1 in which the tip is formed by providing a hot junction from the wires of the thermocouple cable and supported by a sheath as above defined with both tubes and the refractory formed to cap the hot junction.

15. (Amended) A thermocouple as claimed in claim 2 in which the outer tube of the sheath is annealed after the constriction process and the refractory material at least partially sintered during the annealing process.

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Please add the following new claims 18-21:

18. A thermocouple as claimed in claim 2 in which refractory material includes particulate borosilicate and boric acid powder.

19. A thermocouple as claimed in claim 6 in which the boric acid comprises about 3% to 5% weight of the refractory material.

20. A thermocouple as claimed in claim 6 in which the boric acid content of the refractory material is about one half of the borosilicate content.

21. A thermocouple as claimed in claim 7 in which the boric acid content of the refractory material is about one half of the borosilicate content.